ETV Pilot for Indoor Air Products

Filter Testing Workshop
Research Triangle Institute, NC, May 18-19, 1998

Background

As part of the verification program for general ventilation air filters, RTI provided a workshop for testing laboratories interested in participating in the filter verification program. The workshop was open to manufacturers and others interested in filter testing. RTI publicized the workshop with a mailing to all current stakeholders and laboratories known to do testing, as well as with a Commerce Business Daily announcement. Meeting attendees are listed at the end of this summary.

Presentations

Dr. David Ensor provided an overview of the Environmental Technology Verification (ETV) Program and of the ETV General Ventilation Air Filters Testing.

EPA has determined that for general ventilation air filters and commercial furniture, RTI will not perform extensive verification testing, but will rather conduct a pilot test to validate the test protocol and verification process. Multiple laboratories will be included in the pilot test where possible. A verification statement and report will be made, but products names will not be identified. RTI and EPA will then make the test protocol and procedure available for private certification programs.

Mr. Jim Hanley provided an introduction of particle physics, filtration, and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Proposed Standard 52.2P Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size. He also discussed EPA-sponsored research on the conditioning of filters prior to the testing. Based on this research, the plan is to use a fine aerosol of potassium chloride for conditioning.

Ms. Debbie Franke spoke on the quality management issues and the requirements for participating laboratories.

The ETV program is performed under a cooperative agreement between EPA

and RTI. That requires that RTI and companies working with them must have a quality system and must provide EPA with test and quality assurance plans for the work to be performed, including product testing. Quality system standards include:

- ISO 9001-1994 - Quality Systems-Model for quality assurance in designing, development, protection, installing and servicing.
- ANSI/ASQ E4-1994 - Specifications and guidelines for quality systems for environmental data collection and environmental technology programs.
- ISO 25 - General Requirements for the Competence of Testing and Calibration Laboratories.

For laboratories wishing to participate in the filter pilot testing, RTI is establishing the following requirements:

- A track record in filter testing with methods similar to the ETV test method.
- A quality system based on a recognized standard as listed above.
- A test rig and necessary analytical equipment as required by the ASHRAE 52.2P test method.
- Participation in RTI's laboratory proficiency program for ETV filter testing.
- Submission of a test and quality assurance project plan prior to testing.
- Submission to EPA and RTI audits as required.

RTI will provide interested laboratories with the test protocol and a template for the test and quality assurance plan.

Discussion

The schedule allowed time for questions and answers.

- Since the last stakeholder meeting in February, EPA has clarified their position on product testing. There is a real concern that EPA maintain its neutrality and not directly support any private standards or certification program. There is also concern that, with a limited number of test rigs for an ETV program, filters tested early would have a market advantage over filters scheduled to be tested later. By performing limited testing and by developing guidelines for quality management and laboratory proficiency, groundwork has been laid for any private programs to follow.
- The change in conditioning for the ETV testing is not expected to affect the approval of the ASHRAE 52.2 test method. The ETV test protocol

will specify ASHRAE 52.2 test method with the substitution for conditioning. As discussed at the last stakeholder meeting, it is possible that ASHRAE would make an addendum to 52.2 later. The change in conditioning does not affect the test rig, regular dust loading or other test procedures.

- RTI and EPA are developing the quality management and laboratory proficiency programs as guidelines for private organizations that might continue the testing program. It is expected that the laboratories participating in the program will be identified. However, the report will not associate data with individual laboratories. This is not a laboratory certification program, but rather establishing the quality guidelines for the testing. RTI has not discussed its role in future private programs.
- RTI expects to publish a paper about the conditioning once the research is completed. This would allow for peer review and make the information public for ASHRAE and others that are interested.

Laboratory Sessions

In the afternoon of the first day, all participants met with Jim Hanley, DeVaugh Body and Clint Clayton to view the test rig and discuss the testing. Registration was limited for the second day to provide more laboratory access and in-depth discussion for the participants.

The sessions were tailored to the interest of the participants and began with a discussion. The filter testing was demonstration and questions were answered. Areas covered included:

1. Test rig and its operation.
2. Aerosol generation.
3. Dust loading.
4. Background counts.
5. Operation of the particle counters.

Meeting Attendees

Ken Arnold, Purolator
DeVaugh Body, RTI
Brian Boender, Trion
Sam Brubaker, Arcadis G&M
Tom Bruusema. NSF. Intl.

Bill Cambo, Lydall
Danny Charles, Freundenburg
Clint Clayton, RTI
Steve Cox, Hollingsworth & Vose
Gary Delacruz, Farr
Dave Ensor, RTI
Debbie Franke, RTI
Paul Gensler, Environmental Filter
Jim Hanley, RTI
Bob Hendry, Georgia Tech Research Institute
CP Ho, Trion
Joe Kendell, Airguard
Jack Manns, Hollingsworth & Vose
Bill Matkins, Aeolus
Mike McCarthy, Lydall
Dale Montgomery, Flanders
Scott Moore, U.S. EPA
Mike Podoliak, Intertek Testing Services
Glenda Renshaw, Freundenburg
Steve Sanders, Air-Conditioning & Refrigeration Institute
Charles Seyfer, Farr
Les Sparks, U.S. EPA
Chris Stone, Intertek Testing Services
Patty Tetreault, Lydall
Brian Thompson, Freundenburg
Don Thornburg, Farr
Lorrie Todd
R. Vijayakumar, Hollingsworth & Vose
Derald Welles, Technolab
Edward Wright, Flanders